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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/371,347	08/10/1999	ROY A. GRAVEL	50004/003003	9130

21559 7590 05/19/2005

CLARK & ELBING LLP
101 FEDERAL STREET
BOSTON, MA 02110

EXAMINER

RAMIREZ, DELIA M

ART UNIT PAPER NUMBER

1652

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/371,347

Applicant(s)

GRAVEL ET AL.

Examiner

Delia M. Ramirez

Art Unit

1652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48, 49 and 56-70 is/are pending in the application.
- 4a) Of the above claim(s) 48 and 49 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 56-67 is/are allowed.
- 6) ☒ Claim(s) 68-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: alignment.

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DETAILED ACTION

Status of the Application

Claims 48-49, 56-70 are pending.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/25/2005 has been entered.

Applicant's amendment canceling claims 1-5, 36-38, 41-43, 45-47, 52-55, and addition of claims 56-70 in a communication filed on 2/25/2005 is acknowledged.

Claims 48-49 remain withdrawn from consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected species. Claims 56-70 are under consideration and are being examined herein.

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn.

Claim Rejections - 35 USC § 112, Second Paragraph

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 69 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 69 is deemed indefinite due to the recitation of "the antisense nucleic acid molecule of claim 68...comprises a polynucleotide sequence....wherein said binding site comprises any one of SEQ ID NO:25 or 52-61" for the following reasons. Upon an alignment of SEQ ID NO: 1, 41, 43, 45 and 47 against SEQ ID NO: 25 and 52-61, it was found that SEQ ID NO:45 does not comprise SEQ ID NO:25. See attached alignment. Therefore, there is no antisense nucleic acid as claimed wherein said binding site

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comprises SEQ ID NO: 25. For examination purposes, it will be assumed that there is no recitation of "SEQ ID NO:25" in the claim. Correction is required.

Claim Rejections - 35 USC § 112, First Paragraph

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 68-70 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. Claims 68-70 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for antisense nucleic acids consisting of fragments of the complete complements of the polynucleotides of SEQ ID NO:1, 41, 43, 45 or 47, does not reasonably provide enablement for polynucleotides of any function comprising the recited fragments of the complete complements of the polynucleotides of SEQ ID NO:1, 41, 43, 45 or 47. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

7. Applicants argue that the subject matter of claims 68-70 is enabled and described by the specification since it discloses and enables nucleic acid molecules which are completely complementary to at least 18 contiguous nucleotides of a mammalian methionine synthase reductase gene having the polynucleotide sequence of SEQ ID NO:1, 41, 43, 45 or 47.

8. Applicant's arguments have been fully considered but are not deemed persuasive to avoid the rejections of claims 68-70, which are directed to a genus of polynucleotides of any function comprising

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fragments of the complete complements of the polynucleotides of SEQ ID NO: 1, 41, 43, 45 or 47.

While the Examiner acknowledges the amendments to the claims, and agrees that fragments of the complete complement of the recited polynucleotides, i.e. SEQ ID NO:1, 41, 43, 45 or 47, are described and enabled by the teachings of the specification, it is noted that the term "having" is considered open language equivalent to the term "comprising". Therefore, claims 68-70 are directed to a genus of polynucleotides of any function comprising the recited fragments. Such genus is not deemed adequately described since the functions or structures of all the species in that genus have not been disclosed. Furthermore, while a sufficient written description of a genus of polynucleotides may be achieved by recitation of a representative number of polynucleotides defined by nucleotide sequence or a recitation of structural features common to members of the genus, which features constitute a substantial portion of the genus, in the instant case, the recited structural features do not constitute a substantial portion of the genus as the remainder of any nucleic acid comprising said structural elements is completely undefined and the specification does not define the remaining structural features for members of the genus to be selected. In addition, the claimed genus of nucleic acids is not enabled since the specification fails to provide a function for all the species recited and determining a function for all the species in the genus such that one of skill in the art find a specific and substantial use for the claimed invention would constitute undue experimentation.

9. It is noted that amending the claims to recite "consisting of" instead of "having" would obviate these rejections.

Allowable Subject Matter

10. Claims 56-67 appear to be allowable over the prior art of record.

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Conclusion

11. Certain papers related to this application may be submitted to Art Unit 1652 by facsimile transmission. The FAX number is (571) 273-8300. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If Applicant submits a paper by FAX, the original copy should be retained by Applicant or Applicant's representative. **NO DUPLICATE COPIES SHOULD BE SUBMITTED**, so as to avoid the processing of duplicate papers in the Office.


12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PMR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delia M. Ramirez whose telephone number is (571) 272-0938. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Ponnathapura Achutamurthy can be reached on (571) 272-0928. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Delia M. Ramirez, Ph.D.
Patent Examiner
Art Unit 1652

DR
May 11, 2005


REBECCA E. PROUTY
PRIMARY EXAMINER
GROUP 1600
1600

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us-09-371-347a-45 (1-2094) x us-09-371-347A-52 (1-20)

Oy 10 TTCTCTGTTACTATATGTCACACAGCAGGACAGGCAAGGCCATCGCAGAGAAATGTGT 69
    |||||
Db 1 PheLeuLeuLeuTyraAlaThrGlnGlnGlyGlnAlaLysAlaIleAlaGluGluMetCys 20

RESULT 15
US-09-371-347A-25
; Sequence 25, Application US/09371347A
; GENERAL INFORMATION:
; APPLICANT: Gravel, Roy A,
; APPLICANT: Rozen, Rima
; APPLICANT: Leclerc, Daniel
; APPLICANT: Wilson, Aaron
; APPLICANT: Rosenblatt, David
; TITLE OF INVENTION: HUMAN METHIONINE SYNTHASE REDUCTASE:
; TITLE OF INVENTION: CLONING, AND METHODS FOR EVALUATING RISK OF NEURAL TUBE
; TITLE OF INVENTION: DEFECTS, CARDIOVASCULAR DISEASE, AND CANCER
; FILE REFERENCE: 50004/003003
; CURRENT APPLICATION NUMBER: US/09/371,347A
; CURRENT FILING DATE: 1999-08-10
; PRIOR APPLICATION NUMBER: 09/232,028
; PRIOR FILING DATE: 1999-01-15
; PRIOR APPLICATION NUMBER: 60/071,622
; PRIOR FILING DATE: 1998-01-16
; NUMBER OF SEQ ID NOS: 61
; SOFTWARE: FastSeq for Windows: Version 4.0
; SEQ ID NO 25
; LENGTH: 18
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-371-347A-25

Alignment Scores:
Pred: NO.: 16.1 Length: 18
Score: 94.50 Matches: 17

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